

REMARKS

The remainder of this amendment is set forth under appropriate subheadings for the convenience of the Examiner.

Summary of Interview with Examiners Flory and Manuel

Applicants would like to thank Examiners Flory and Manuel for granting a telephone interview with Applicants' attorney and with Dr. Herr on April 2, 2009. The claims have been amended in accordance with the comments made by the Examiners during the interview. Specifically, all of the independent claims have been amended to specify that modulation of joint or ankle stiffness, or damping, is accomplished by computer-controlled actuation. Further, independent Claims 1, 12, 19, 24, 25 and 31 have been amended to specify that the computer-controlled actuation of joint stiffness or damping of an ankle joint in an updating manner is conducted at least three times during each walking cycle. Claim 21 has been amended to correct a minor, self-evident, grammatical error.

Support for the amendments to the claims can be found throughout the specification, such as at page 7, lines 1-5. Details of the computer-controlled actuation can be found specifically at page 2, lines 21-23, page 6, lines 22-29 and page 7, line 8 through page 16, line 23. No new matter has been added.

During the telephone interview, the rejection of Claims 19-23 and 32 under 35 U.S.C. § 101 was discussed and Applicants proposed, at that time, to amend independent Claim 19 by including the limitation that modulation was by computer-controlled actuation. With respect to prior art rejections, Beard '296 and new references, Grim '661 and Kelly '948, were discussed. Applicants proposed amending all of the independent claims to specify modulation, by computer-controlled actuation in an updating manner at least three times during each walking cycle, of joint stiffness or damping. The understanding of this amendment is that modulation of either joint stiffness or damping of the ankle joint occurs at least three times, whereby, for example, joint stiffness can be modulated in an updating manner three times, or damping of an ankle joint can be modulated in an updating manner three times, or any combination of modulating joint stiffness and damping (e.g., joint stiffness is updated twice and ankle damping

of an ankle joint is updated once, or vice versa) in an updating manner would meet the limitations of the independent claims, as amended.

Applicants and the Applicants' attorney believes that these amendments to the claims overcome all of the outstanding rejections as identified in the most recent Office action.

Rejection of Claims under 35 U.S.C. § 101

Claims 19-23 and 32 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The Examiner stated that the rejected claims effectively claim the natural process of walking itself under normal physiological conditions, since tensing of the muscles in the leg provides the claimed modulation of joint stiffness and damping, and is updated in a constant manner throughout gait and over time as the muscles fatigue.

As discussed above, independent Claim 19 and, consequently, dependent Claims 20-23 and 32, have been amended to specify that the modulations are conducted by computer-controlled actuation. As amended, these claims no longer read on any natural process of walking under normal physiological conditions. Therefore, Applicants believe that Claims 19-23 and 32 meet the requirements of 35 U.S.C. § 101 as statutorily competent subject matter.

Rejection of Claims under 35 U.S.C. § 102(b)

All of the claims stand rejected under 35 U.S.C. § 102(b) in view of references previously cited, including Beard '296, Stein '332, Swain '757, Johnson '693, Horst '882 and Goffer '821. Additional references were also cited, namely Grim '661 and Kelly '948.

During the telephone interview, Applicants' attorney asserted that the amended claims, wherein modulation by computer-driven actuation of joint stiffness or damping of an ankle joint in an updating manner at least three times during each walk cycle would not read on any of the references of record, thereby obviating all novelty rejections currently outstanding. Applicants request reconsideration of withdrawal of all novelty rejections in view of the pending claims, as now amended.

Rejection of Claims under 35 U.S.C. § 103(a)

Claims 6-8 stand rejected under 35 U.S.C. § 103(a) over Beard '296.

As discussed above, no new references, either separately or in combination with Beard '296, disclose or suggest a device that modulates by computer-controlled actuation a joint stiffness or damping of an ankle joint in an updating manner at least three times during each walking cycle, as set forth in amended independent Claim 1. There is no motivation provided in any of the references whereby one of ordinary skill in the art would modify the teachings of Beard '296 or be capable of modifying the teachings of Beard '296 to obtain Applicants' claimed variable-impedance active-ankle orthosis of independent Claim 1. Therefore, the subject matter of independent Claim 1, and Claims 6-8, which depend from independent Claim 1, meet the requirements of 35 U.S.C. § 103(c).

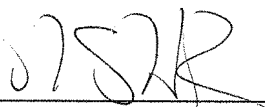
CONCLUSION

Independent Claims 1, 12, 19, 24, 25 and 31 have been amended to include the limitation that the device and method of the claimed invention includes modulation, by computer-controlled actuation, of joint stiffness or damping of an ankle joint, in an updating manner at least three times during each walking cycle. Independent Claims 37-41 have been amended to include the limitation that the device and method are configured to modulate joint stiffness or damping of an ankle joint by computer-controlled actuation. Claims 19-23 and 32, as amended, meet the requirements of 35 U.S.C. § 101 as statutorily competent subject matter. As amended, all of the pending claims meet the requirements of 35 U.S.C. § 102 and 103 in view of the references of record. Therefore, Applicants respectfully request that all of the outstanding rejections be reconsidered and withdrawn.

If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
N. Scott Pierce
Registration No. 34,900
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

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